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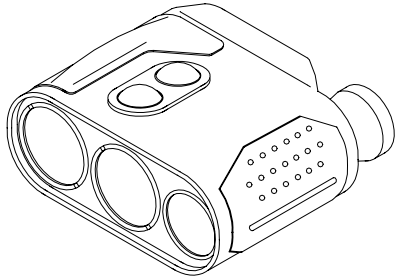
Operation Manual



LRM 1200 / LRM 1500
LRM 1500SPD

LASER RANGE FINDER MONOCULAR

In USA: 3310 Prospect Ave. Cleveland, OH 44115
In Canada: 105 Sparks Ave., Toronto, ON M2H 2S5

IMPORTANT INFORMATION

Read prior to activation

You have just purchased a complicated electronic device. To operate it properly, please read this manual carefully. Here are some common precautions that must be noted.

- **NEVER** subject the unit to impact while operating or being transported
- **NEVER** transport the unit without the case
- **NEVER** disassemble the unit. This device contains high voltage components, which may be hazardous to you!
- **NEVER** reverse the polarity of a battery
- **ALWAYS** remove batteries when not in use for a long period
- **ALWAYS** store in a warm dry place when not in use
- **Caution** - use of controls or adjustments, or performance of proceedings other than those specified herein may result in hazardous radiation exposure
- **Caution** - the use of optical instruments with this product will increase eye hazard

NOTES:

10. QUALITY CERTIFICATE

The LRM 1200 / LRM 1500 / LRM 1500SPD is suited for usage.

Production date _____

Serial number _____

Quality Inspector signature _____

Purchase date _____

Salesman _____

Quality Assurance Seal_____

Features of the LRM 1200 / LRM 1500 / LRM 1500SPD Laser Range Finder Monocular

- Latest digital circuitry allows targeting through most types of glass
- 'Last Target' measurement
- Meters/Yards display
- Last 10 readings recall
- Selectable reticle shape (+ or □)
- Target quality indicator
- Speed Finder (LRM 1500SPD)

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BEFORE USE CAREFULLY READ ALL THE INSTRUCTIONS!

FAILURE TO OBEY THE INSTRUCTIONS WILL VOID THE WARRANTY!

1. BRIEF DESCRIPTION

LRM 1200 / LRM 1500 / LRM 1500SPD Laser Range Finder Monocular is advanced Laser Range Finder system that provides instant distance measurements consistently and accurately. The outstanding optics provides a sharp, clear image under all conditions. LRM is utilizing a revolutionary digital design, which is outperforming any other product in its class and price range.

The unit sends an invisible, eye safe laser beam pulses to the target. The returned beams are captured by the digital circuitry. The time differential allows us to calculate the distance to the target.

9. CUSTOMER SUPPORT

Should you experience any difficulties with your Newcon OPTIK product, consult the enclosed manual. If the problem remains unresolved, contact our customer support department at (416) 663-6963 or Toll free at 1-877-398-6666. Our operating hours are 9am-5pm, Monday - Friday, Standard East Time.

At no time should equipment be sent back to Newcon without following the instructions of our technical support department.
Newcon accepts no responsibility for unauthorized returns.

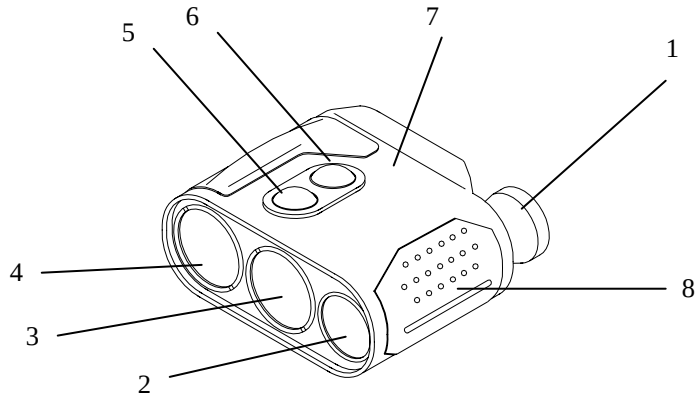
To locate NEWCON Authorized Dealer call:
Tel: (416) 663-6963 Fax: (416) 663-9065
Email: NEWCONSALES@NEWCON-OPTIK.COM
INTERNET: http://WWW.NEWCON-OPTIK.COM
The defective products should be shipped to:
In USA: 3310 Prospect Ave. Cleveland, OH 44115
In Canada: 105 Sparks Ave., Toronto, ON M2H 2S5
From International:
105 Sparks Ave., Toronto, ON M2H 2S5, CANADA

8. WARRANTY

NEWCON OPTIK warrants this product against defects in material and workmanship for one year from the date of the original date of consumer's purchase, but no more than 18 months from the date of manufacturing. Should your Newcon product prove defective during this period, please bring the product securely packaged in its original container or an equivalent, along with proof of the date of original purchase, to your Newcon Dealer. Newcon will repair (or at its option replace), the product or part thereof, which, on inspection by Newcon, is found to be defective in materials or workmanship**.**

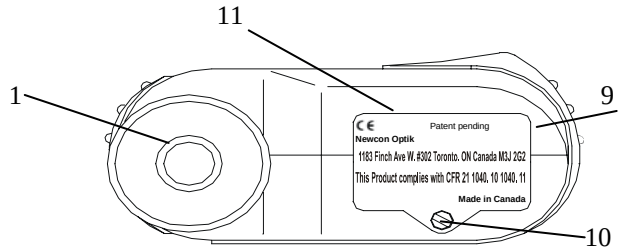
*What This **Warranty Does Not Cover:***
NEWCON is not responsible for warranty service should the product fail to be properly maintained or fail to function properly as a result of misuse, abuse, improper installation, neglect, damage caused by disasters such as fire, flood, lightning, improper electrical current, or service other than by a NEWCON Authorized Service. Postage, insurance, or shipping costs incurred in presenting your NEWCON product for warranty service are your responsibility. Please include a check or money order made out to NEWCON OPTIK for the amount of $15.00 to cover shipping and handling. This covers products shipped in USA or Canada only.

2. APPEARANCE OF THE DEVICE



1 – Eyepiece; 2 – Objective lens; 3 – Laser emitting lens
4 – Receiver lens; 5 – Mode button; 6 – Action button;
7 – Body of the device; 8 – Rubber grip

Fig. 1



1 – Eyepiece; **9 –** Battery compartment cover; **10 –** Screw;
11- Identification label
Fig. 2

3. SUPPLIED ACCESSORIES

LRM is supplied in the following assembly:

- Device	1 pc.
- Carrying Case	1 pc.
- Neck Strap	1 pc.
- User's manual	1 pc.
- Warranty card	1 pc.
- 9V battery (optional)	1 pc.

7. TROUBLESHOOTING

The range-measuring mode does not work.
Press the Action Button again.
Check that the batteries are installed properly. Check the charge of the batteries. Replace if they are weak. Do not use old batteries with new ones.

How can I clear last reading before making next measurement?
Direct the unit's LCD reticle at the new target, press the Action button. The new reading will appear.

There are black dots in the image.
A LCD (Liquid Crystal Display) is installed in the optical channel of the device. Due to manufacturing imperfections in the production process of the LCD, small black dots, scratches and other blemishes might be visible. Those blemishes are strictly regulated for maximum allowed number, size and location. It does not degrade the product's performance.

Range measurement cannot be obtained.

- Check if range detection mode is activated (message READY appears on the LCD display)
- Check if Active Button is pressed
- Make sure that neither your hand or finger is blocking objective lenses, Laser emitting lens or Receiver lens.
- Check if the unit is steady while pressing Action button.

6. STORAGE AND MAINTENANCE INSTRUCTIONS.

Precautions: LRM is a sophisticated precision optical instrument equipped with electronics. Therefore, it should be handled with due care.

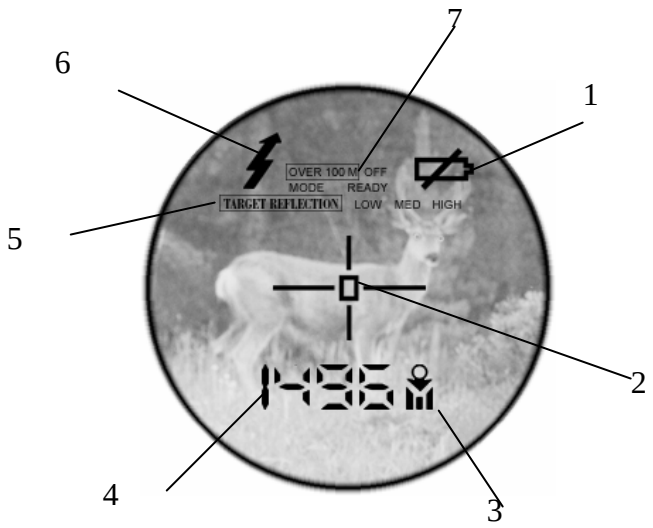
- Keep your device away from direct sunlight, impacts, dust, moisture, and sudden changes of temperatures.
- Do not keep the device at temperatures higher than 50°C (122°F).
- Do not touch the optical surfaces with fingers. Doing so may damage the anti-reflection coating.
- Avoid shocks and sharp jolts.
- Cleaning of optical surfaces is only allowed with professional camera lens cleaning supplies.
- To clean the exterior of the device, use a soft clean cloth.
- Keep away from heating appliances and central heating.
- Remove the batteries when storing the device for long period of time.
- The manufacturer can only make repair works.

4. TECHNICAL CHARACTERISTICS

1. Optics	Magnification, x	7
	Objective Lens, mm	25
	Exit Pupil Diameter, mm	3.6
	Field of View	8°
	Type of Coating	Fully multi-coated optics
	Reticle	Corresponds to laser direction and approx. size of the laser on target
2. Range Finder	Type	Class 1, eye safe, 905nm
	Measuring Range, m	
	- LRM 1200	20 – 1,200
	- LRM 1500, LRM 1500SPD	20 – 1,500
	Accuracy	± 1m ± 0.1%
	'Last Target' measurement	Yes
	Meters/Yards display	Yes
	Last 10 readings recall	Yes
	Reticle shape (+ or □)	Yes
	Target quality indicator	Optional
3. Speed Detection	Model LRM 1500SPD only	Yes
	- Measured speed range, KmH	5 – 500
	- Accuracy, KmH	± 1
4. Misc.	Battery	9 V
	'Low Battery' Indicator	Yes
	Tripod thread	¼" x 20
	Operational Temperature Range	-25 / +50°C (-13 / +122°F)
	Storage Temperature Range	-45 / +85°C (-49 / +185°F)
	Weight without battery, g	420
	Dimensions, mm	120 x 122 x 60

5. OPERATION INSTRUCTIONS

Liquid Crystal Display (LCD)



1 – Low Battery indicator; 2 – Reticle (cross or rectangular selectable);
3 – Units of measurement (Yards, Meters, KMH,
MPH or Degrees); 4 – Measurement result;
5 – Target Quality indicator (optional); 6 – Laser Active indicator
7 – Over 100m indicator (optional).

Fig. 3

The displayed statistical qualification of the reflected signal characterizes variation in expected accuracy of measurements. At qualification **HIGH** the accuracy of measurements is stated as ±1m ± 0.1%. At lower rates of statistical qualification the expected accuracy may marginally degrade.
Please note: this is an optional feature.

The display presents message **LOW BAT** – when voltage of the primary 9-volt battery drops below 7.2 volt. At this point the System is still functional but the battery should be replaced as soon as possible. The System can operate at the voltage level above 7 volt.

The System remains in the active displaying state for 10 seconds after pressing of any of the operating buttons and after 10 seconds enters the passive low power state.
Alkaline or lithium type of batteries capable to sustain current drain up to 150 ma should be used for powering the System.

c. Reflection

Distance measuring procedure includes instant statistical processing of the package of single measuring sessions. Qualitative result of the statistical processing is presented on the Display as a message **TARGET REFLECTION (5)**.
There are four statistical qualifications of the reflected signal:

- **NO TARGET REFLECTION** – when a steady reflected signal isn't received. Numerical display shows four dashes at the distance displaying area;
- **TARGET REFLECTION LOW** – when the number of steady received reflected signals is just enough to make acceptable conclusion about the measured distance;
- **TARGET REFLECTION MED** - when the number of steady received reflected signals is in medium range and enough to make positive conclusion about the measured distance;
- **TARGET REFLECTION HIGH** - when the number of steady received reflected signals is qualified to be enough to make reliable conclusion about the measured distance.

5.1. Preparing the Device for Operation.

- Unscrew the screw (10) and open battery compartment cover (9) (fig. 2).
- Insert one 9V battery (sold separately) into the battery compartment observing correct polarity.
- Close the battery compartment cover (9) tighten screw (10).

After changing the battery, it is recommended to run the CL (CLEAR) mode (refer mode selection procedure).

5.2. Distance Measuring Procedure

a. Measuring state

When the Rangefinder is in the passive, low power state, the LCD Display is blank (transparent).
Pressing any of the operating buttons activates the System and the Display. Initially the System always assumes READY mode of operation and word READY appears on the Display.
Pressing Action button (6) (fig. 1) at this point triggers a distance measuring session, and the result will be displayed in numerical form (4) (fig. 3) (if measurement is unsuccessful then four dashes '----' will appear in the numerical area). Please note that the target must be over 20m away.
Optional scanning mode: If the Action button (6) is held (pressed) for more than 3 seconds the System automatically enters SCANNING mode. At this mode the System repetitively performs distance measuring and displaying.

The time interval between measurements is approximately 1 second. **Please note: this feature is optional and not necessarily present in your device.**
The maximum measuring range for most objects will be 1200m with LRM 1200 and 1512m with models LRM 1500 and LRM 1500SPD. The maximum measured distance will vary greatly depending on the reflectivity of the target, weather conditions and more.
Target reflectivity depends on its color, surface finish, shape etc. Bright colors are more reflective than darks. A polished surface is more reflective than a rough one. Larger targets are easier for distance measuring. Measuring a target faced at 90^{o} (perpendicular to the laser beams path) provides optimal results.
Bad weather conditions (rain, fog, snow, mist) will reduce the maximum measured range.
Bright sunny days will reduce performance as well
While the unit will work through many glass types, measuring through glass will affect the results.

b. Mode selection state

Pressing MODE button (5) when the System is in READY mode brings the System to the Mode selecting state. Pressing the Mode button can sequentially scan the Modes. The Mode under selection is being indicated on the Display by flashing of the selectable feature. The "flashing" feature can be selected by pressing the Action button (6).

The System operates in the setting Modes that are displayed as follows (refer to fig.3):
Y/M – units of measurement: yards or meters (3).
KMH/MPH – units of speed measurement: km/hour or miles/hour (3).
Please note: this is feature is provided with LRM 1500SPD only.
Shape of the reticle: cross shape or rectangular shape (2). Please note: this is an optional feature.
rEC1 - recall function. Upon pressing the Action button (6) (fig. 1) the Display will sequentially show results of last 10 measurements, starting from the latest one. The number appearing after word "**rEC**" shows the number of the measurement counted back in the sequence. When the System is in inactive state the 10 previous measurements are stored within the System and may be recalled any time;
CL - clear data function: upon pressing the Action button (6) (fig. 1) the entire data on all previous measurements will be erased.
NOTE: After changing a battery the recall stack should be cleared by exercising the **CL** mode.
OVER 100 – allows to ignore targets closer than 100m. Useful when looking through bush.
Please note: this is an optional feature on early designs. Latest version includes automatic “Last Target” selection that renders obsolete the requirement for a separate manual mode selection.